

days, there were no death, follow-up myocardial infarction or stent thrombosis. There was however 1 case of target vessel revascularization not related to BVS.

**Conclusions:** These preliminary results suggest that complex lesions can possibly be successfully treated with BVS. Intravascular ultrasound guidance and meticulous technique may be important to optimize clinical outcomes.

## Circulatory Support, Heart Failure, and HOCM

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### TCT-433

#### Percutaneous coronary intervention with a percutaneous left ventricular assist device support (TandemHeart®): 6 years' experience and outcomes

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**Background:** We have used the TandemHeart® (Cardiac Assist, Pittsburgh, PA) percutaneous left ventricular assist device during percutaneous coronary intervention (PCI) in patients for whom conventional PCI and aorto-coronary bypass would pose substantial risk due to comorbidities and/or clinical presentation. We present a retrospective series of patients and report clinical outcomes with a 6 year follow up

**Methods:** We retrospectively analyzed data from 626 consecutive PCIs at the Texas Heart Institute from 2005 to 2011. Among these, we identified 74 cases performed with TandemHeart support. Cases were classified as elective, urgent, emergent, or emergent salvage according to STS definitions. To standardize intervention's complexity, we calculated each patient's SYNTAX score. Ejection fraction prior to the procedure (EF), left mean atrial pressure prior to PCI (LAP), mean cardiac output provided by mechanical support (mCO) and length of hemodynamic support provided for successful weaning (LCS) were recorded. Incidences of 30-day mortality, prolonged hospital stay (i.e. hospitalization greater than 14 days), stroke, prolonged ventilation (i.e. > 24 hours), post-procedural acute kidney injury (i.e. increase of greater than 0.5 mg/dl in creatinine).

**Results:** Mortality at 30 days for the elective, urgent, emergent, and emergent salvage subgroups was 6%, 12%, 22%, and 38%. Anatomic complexity (SYNTAX score), hemodynamic instability (LAP) and morbidity were collected for each group. In the elective subgroup LCS was 1±0.1 days and all patients in this group were successfully weaned from mechanical support. In the urgent subgroup LCS was 3.9±2.6 days and all patients were successfully weaned from mechanical support. In the emergent subgroup LCS was 3.9±2.6 days, and 84% (16/19) patients were successfully weaned from mechanical support. In the rescue subgroup 67% of the patients (14/22) cardiopulmonary resuscitation (CPR) was in progress or had recently performed prior to the procedure, LCS was 6.9±4.5 days and 54% (12/22) patients were successfully weaned.

**Conclusions:** TandemHeart-assisted PCI is a valid option for revascularization in profound cardiogenic shock and extreme-risk elective revascularization.

### TCT-434

#### Effectiveness and Safety Beyond 10 Years of Percutaneous Transluminal Septal Ablation in the Hypertrophic Obstructive Cardiomyopathy: Results from a Multicenter Registry.

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**Background:** Percutaneous transluminal septal ablation (PTSMA) is an alternative treatment to surgery in patients with hypertrophic obstructive cardiomyopathy (HOCM) with advanced symptoms despite optimal medical treatment, specially under high surgical risk. However, due to the relatively new introduction of the technique the very long term results of PTSMA (>10 years) are unknown.

**Methods:** We have included in the present study consecutive patients with HOCM treated with PTSMA in 5 centers between 1998 and 2003. We have analyzed clinical, hemodynamic and echocardiographic data at baseline and follow up.

**Results:** A total of 45 patients were included, 31 (69%) women and mean age 62.4±14 years. Among those 39 (86.6%) were in NYHA class III or IV. The septum thickness was 21.8±3.5 mm, maximum basal gradient in echo 77±39 mmHg and mitral regurgitation

was at least moderate in 22 (48.8%). In hospitalization 3 pts required permanent pacemaker implantation and 1 pt had ventricular perforation (by pacing lead) undergoing surgery. After a median follow up of 12.3 years (11-13.5), 9 pts died and among these 2 pts (4.4%) suffered cardiac death (heart failure and post-transplantation), 2 pts underwent ICD implantation (the case with perforation and surgery due to subsequent ventricular tachycardia, and other for primary prevention), 2 underwent cardiac surgery (endocarditis and severe mitral regurgitation). In the last clinical review NYHA class was I-II in 39 (86.6%), (p<0.0001), the maximum basal gradient was 16±23 mmHg (p<0.0001) and mitral regurgitation was absent or mild in 34 (75.5%) (p<0.03).

**Conclusions:** The results of this study suggest safety and efficacy for PTSMA at a very long term follow up, over 10 years. A sustained reduction in gradients, mitral regurgitation and functional class is observed. This treatment was not associated with significant incidence of sudden death or ventricular arrhythmias.

### TCT-435

#### Early experience of CT angiography in planning alcohol septal ablation (ASA) for hypertrophic obstructive cardiomyopathy (HOCM)

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**Background:** ASA is an established treatment for HOCM. Up to 30% have an unsatisfactory outcome from intended treatment.

**Methods:** CT images are used to highlight the SAM-septal contact point. Vascular supply to this area is identified, the course and origin of these vessels are described. The target septal is labeled and a 3D angiogram created to define optimal angiographic angles. All major epicardial arteries are surveyed to identify any further target vessels and exclude those with an inappropriate distribution.

**Results:** 16 patients have undergone CT angiography prior to ASA. The approach to ASA was changed in 9. CT can identify septal arteries that bifurcate to supply both the left and right ventricular septum. Contrast injection into the ostium of such arteries localises to the RV due to the pressure differential between coronary flow to RV and LV. On balloon occlusion of the LV sub-branch the contrast localises to the target area. CT can reliably determine the sub-branch that supplies the target area. This has occurred in 6/16 patients. 3 patients had epicardial artery source other than LAD (circumflex, diagonal, obtuse marginal). 12 patients have received alcohol and have >1 month review. 11/12 have improved dyspnoea (one has progressive pulmonary fibrosis). LVOT gradients have decreased by >50% from baseline to a final level of <50mmHg in all. Peak VO2 is improved in all 6 who have undergone 6-month testing.

**Conclusions:** CT has the ability to describe intricate details of septal arterial anatomy. Our approach to ASA is changing and contrast localisation is more accurate. Initial results are very encouraging.

